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WATER SUPPLY OUTLOOK FOR ARIZONA



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

SALT RIVER VALLEY WATER USERS ASSOCIATION

and

ARIZONA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation
with Federal, State and private organizations listed inside the back cover of this report.

AS OF
FEB. 1, 1974

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

*Cover Photo: Snow Surveyors near Ship Creek,
Alaska snow course.*

PHOTO A-272-11

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 511 N. W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR ARIZONA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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ARIZONA WATER SUPPLY OUTLOOK

FEBRUARY 1, 1974

Good water supplies are in prospect for Arizona due to the excellent carryover storage from last year. Snow cover is generally good, but below average runoff is expected because the soil is very dry. Some water shortages may occur along the upper Gila River where runoff is expected to be much below average.

SNOW COVER

Several light storms occurred the last two weeks in northern Arizona, but increases in snow pack were slight and generally offset by melting at the lower elevations. The snow distribution follows the same relative pattern of the last several years: heaviest on the Verde Watershed and lightest on the Gila. Snow cover now ranges from 30% below average on the Gila to 70% above average on the Verde. Snow depths of 4 to 5 feet with 10 to 15 inches of water occur at the higher elevations of the San Francisco Peaks and in the White Mountains. Heavy snow is also present along the "Rim" where the 2 to 3-foot depth is nearly twice average for this date.

PRECIPITATION

January precipitation was two to three times average with most of it occurring in the first ten days. The scattered storms during the second half were warmer and light rain actually fell on the 21st in many areas below 8,000 feet. Accumulated precipitation since November 1 is now near normal on all watersheds except the Gila.

SOIL MOISTURE

The extremely dry soils of two weeks ago are beginning to improve. Snowmelt at the lower elevations and warm exposures have raised moisture levels in the upper portion of the soil profile. At the colder locations, soils are still very dry and normal runoff cannot be expected unless precipitation is much above average.

RESERVOIR STORAGE

With good carryover storage from last year, all major reservoirs contain much above average amounts of water. Salt River Project reservoirs, presently containing 1.5 million acre-feet, are 75% full and 30% above average. Storage in San Carlos Reservoir is almost four times average, at 64% of capacity.

STREAMFLOW AND WATER SUPPLY

Streamflow has now been below average for six months and is most likely to remain below average through the spring runoff. Based on normal precipitation for the rest of the period, the spring runoff is forecast to produce 120,000 acre-feet on the Verde, 208,000 on the Salt and Tonto, 50,000 on the Gila at the Head of Safford Valley, and 6,500 on the Little Colorado above Lyman Reservoir.

Good water supplies are in prospect for all areas of Arizona served by the major reservoirs. Areas depending on direct diversions, such as along the upper Gila, may expect below average water supplies.

STREAMFLOW FORECASTS **ABOUT FEBRUARY**
1, 1974

BASIN, STREAM and/or FORECAST POINT	THIS YEAR		PAST RECORD		
	FORECAST Thousand Acre Feet	Percent of Average	FORECAST PERIOD	THOUSAND ACRE FEET Last Year	
SALT RIVER DRAINAGE					
Salt near Roosevelt	310	88	Jan-May	4,111.1	1,000.0
Tonto Creek near Roosevelt	100	88	Jan-May	255.2	100.0
Verde River above Horseshoe	148	88	Jan-May	778.9	100.0
Total Salt River Project Streams	358	88	Jan-May	2,219.0	500.0
GILA RIVER DRAINAGE					
Gila River at Bylas	35	88	Jan-May	548.1	110.0
Gila River near Gila	31	88	Jan-May	194.9	50.0
Gila River near Solomon	60	88	Jan-May	599.1	100.0
Gila River near Solomon	18	88	March	187.4	50.0
Gila River near Virden	30	88	Jan-May	18.6	5.0
Frisco River at Clifton	32	81	Jan-May	514.0	100.0
Frisco River at Glenwood	19	81	Jan-May	154.0	30.0
LITTLE COLORADO RIVER DRAINAGE					
Little Colo. River above Lyman Dam	6.5	58	Jan-June	51.8	10.0
GRANITE CREEK DRAINAGE					
Granite Creek	1.0	---	Jan-May	---	---
Willow Creek	0.5	---	Jan-May	---	---
MIMBRES RIVER DRAINAGE					
Mimbres River near Mimbres	1	77	Jan-May	15.1	5.0
COLORADO RIVER DRAINAGE					
Virgin River nr. Littlefield	54	125	Apr-June	208.3	

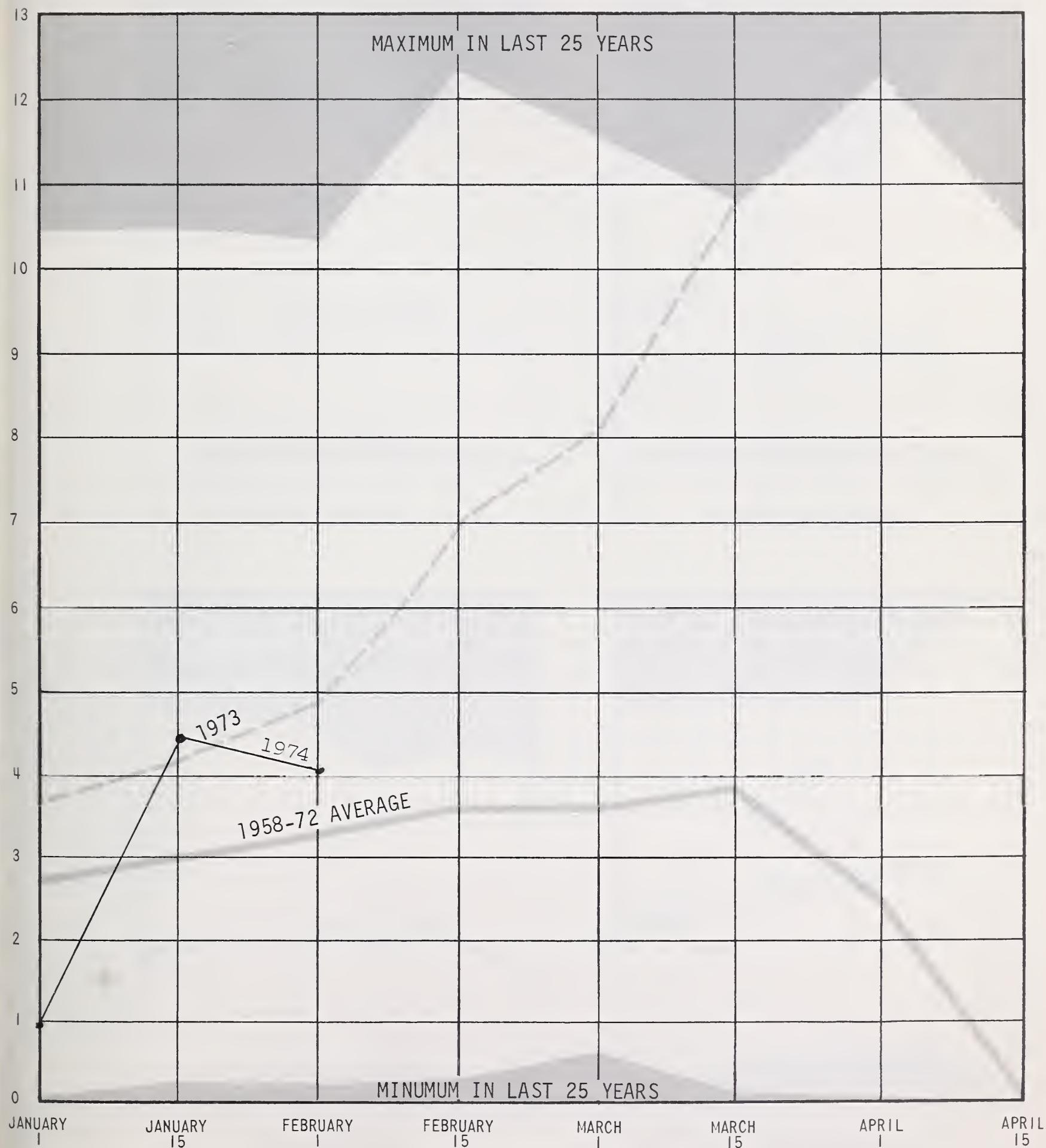
† Based on the 15-year period,
1958-1972

RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

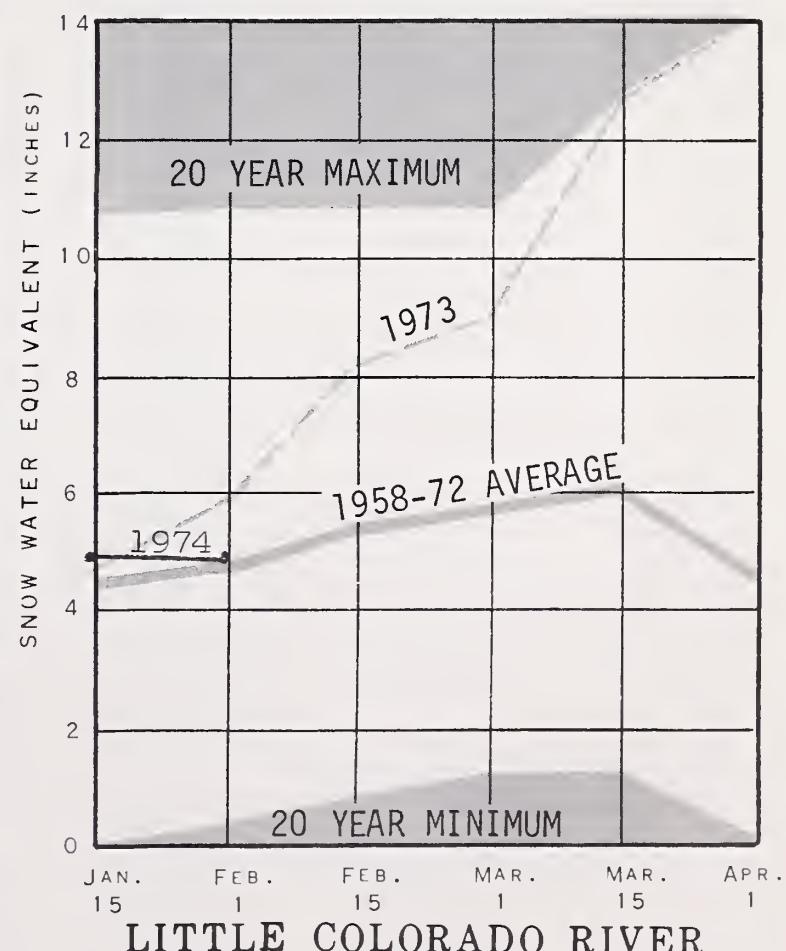
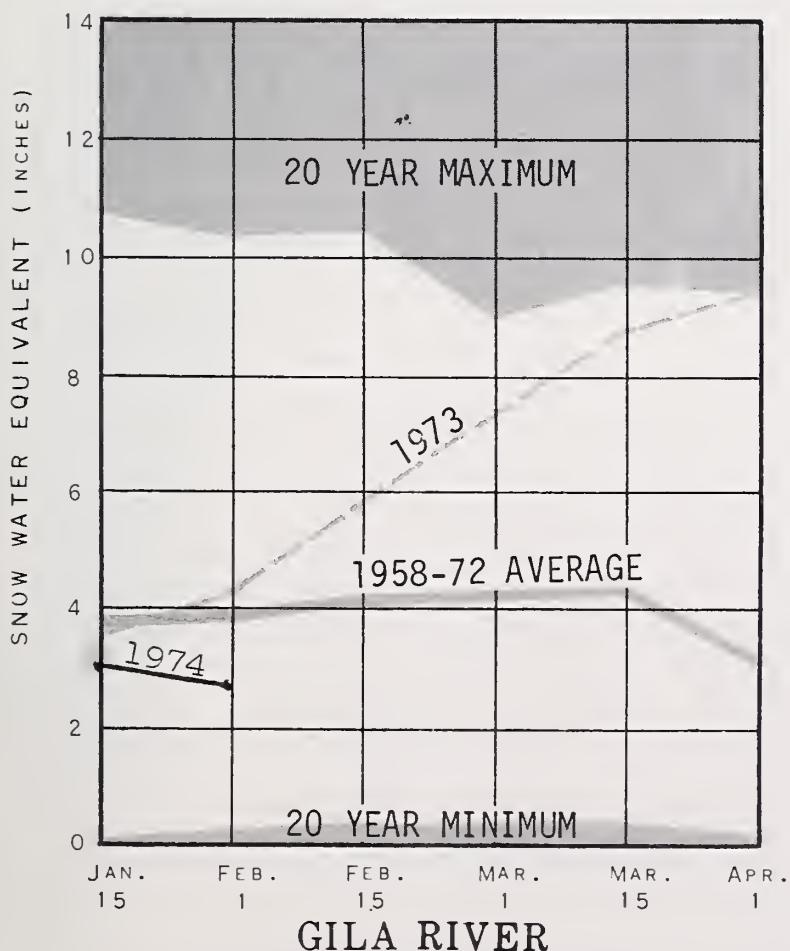
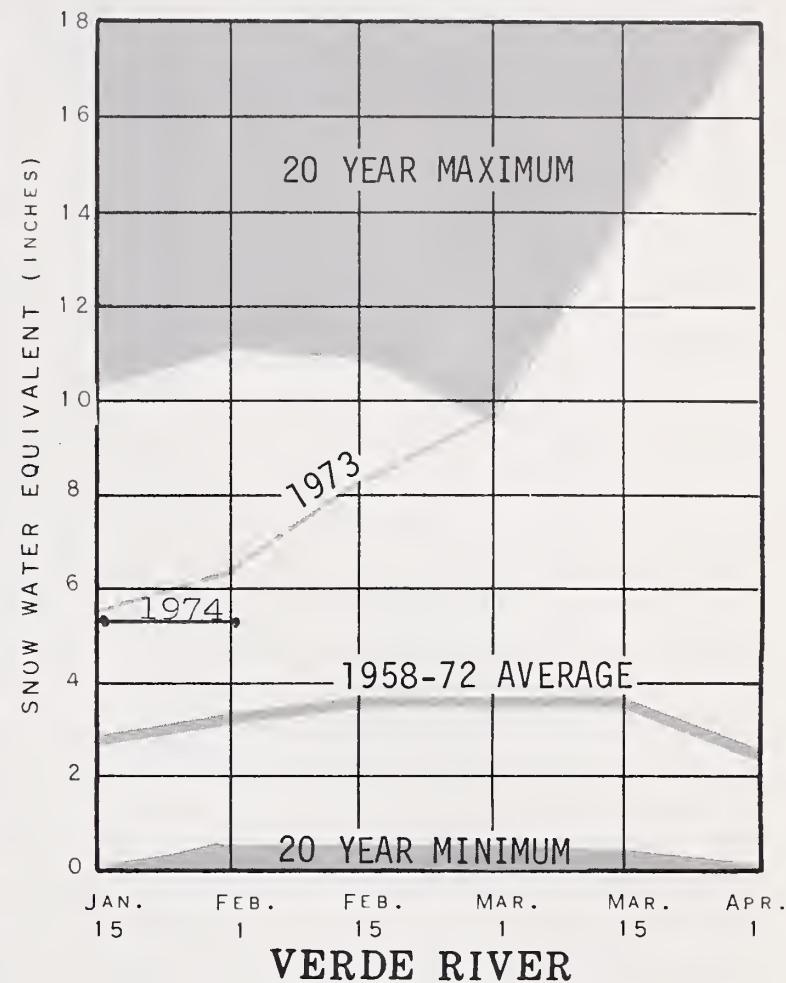
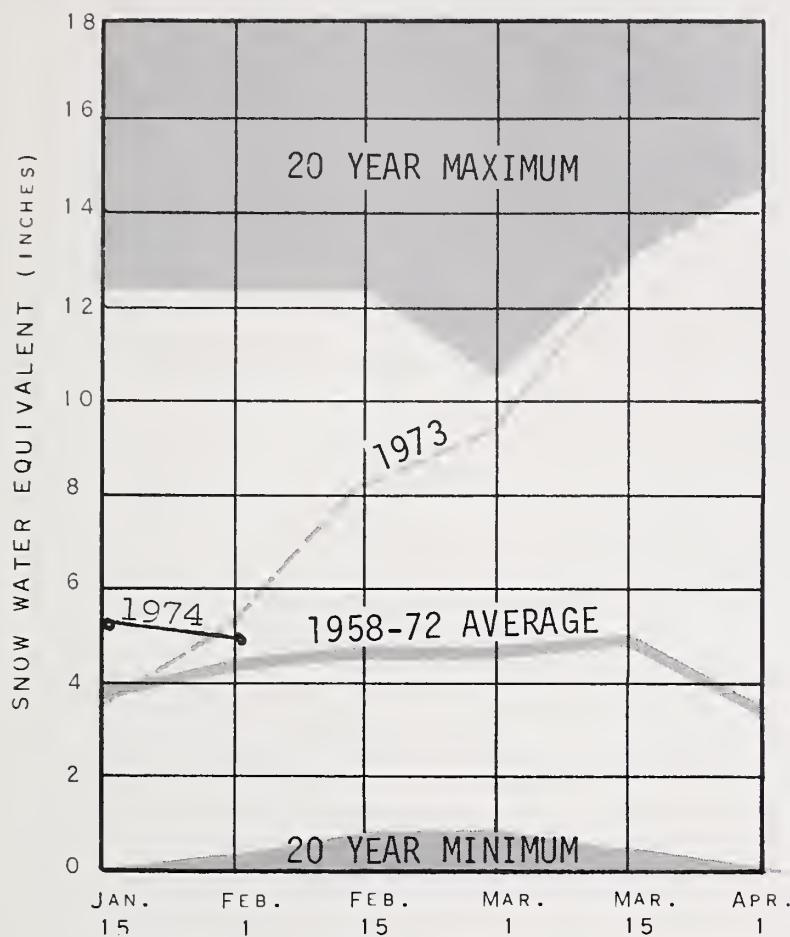
ABOUT FEBRUARY 1, 1974

BASIN or STREAM	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average†
<u>GILA RIVER DRAINAGE</u>					
Agua Fria	Lake Pleasant	157.6	105.6	70.8	59.6
Granite	Watson Lake	4.7	1.3	4.4	
Granite	Willow Creek	6.1	3.1	5.9	
Gila	San Carlos	948.6	612.1	409.7	170.9
Salt (4)	Roosevelt, Apache, Canyon & Saguaro	1,755	1,427.4	1,207	1,076
Verde (2)	Bartlett and Horseshoe	317.7	126.3	274.4	127.2
Salt and Verde	6 Salt River Project Reser- voirs	2,073	1,553.7	1,482	1,204
<u>COLORADO RIVER DRAINAGE</u>					
Colorado	Lake Havasu	619.4	532.8	551.7	544.0
Colorado	Lake Mohave	1,810	1,624.5	1,615	1,676
Colorado	Lake Mead	26,159	20,160.0	19,209	17,320
Colorado	Lake Powell	25,002	17,419.0	12,238	
Little Colorado	Lyman	30.6	23.7	7.7	12.7
Little Colorado	Show Low Lake	5.1	0.9	1.5	1.5
† Based on 15-year period, 1958-72 * Average is for less than 15 years of record					
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* 1958-1972 period.					

AVERAGE SNOW COVER ARIZONA 1974



1974
WATERSHED SNOW COVER



SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

ABOUT FEBRUARY 1, 1974

RIVER BASIN and or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average
Gila	10	65	71
Salt	10	90	116
Verde	10	88	171
Little Colorado	5	86	108



WATER SUPPLY INVENTORY

SALT RIVER VALLEY SYSTEM

FEBRUARY 1, 1974

IN ACRE-FEET

3,000,000

AVERAGE SUPPLY
ON FEBRUARY 1

2,500,000

ANTICIPATED 1974 SUPPLY *

2,000,000

Average Summer
Runoff

Average Spring
Runoff

Average
Storage

Average Summer Runoff

Forecast Runoff
(February-May)

Present Storage

1,500,000

1,000,000

500,000

0

Based on Present Storage + Forecast Spring Runoff + Average Summer Runoff

SNOW ABOUT FEBRUARY 1, 1974

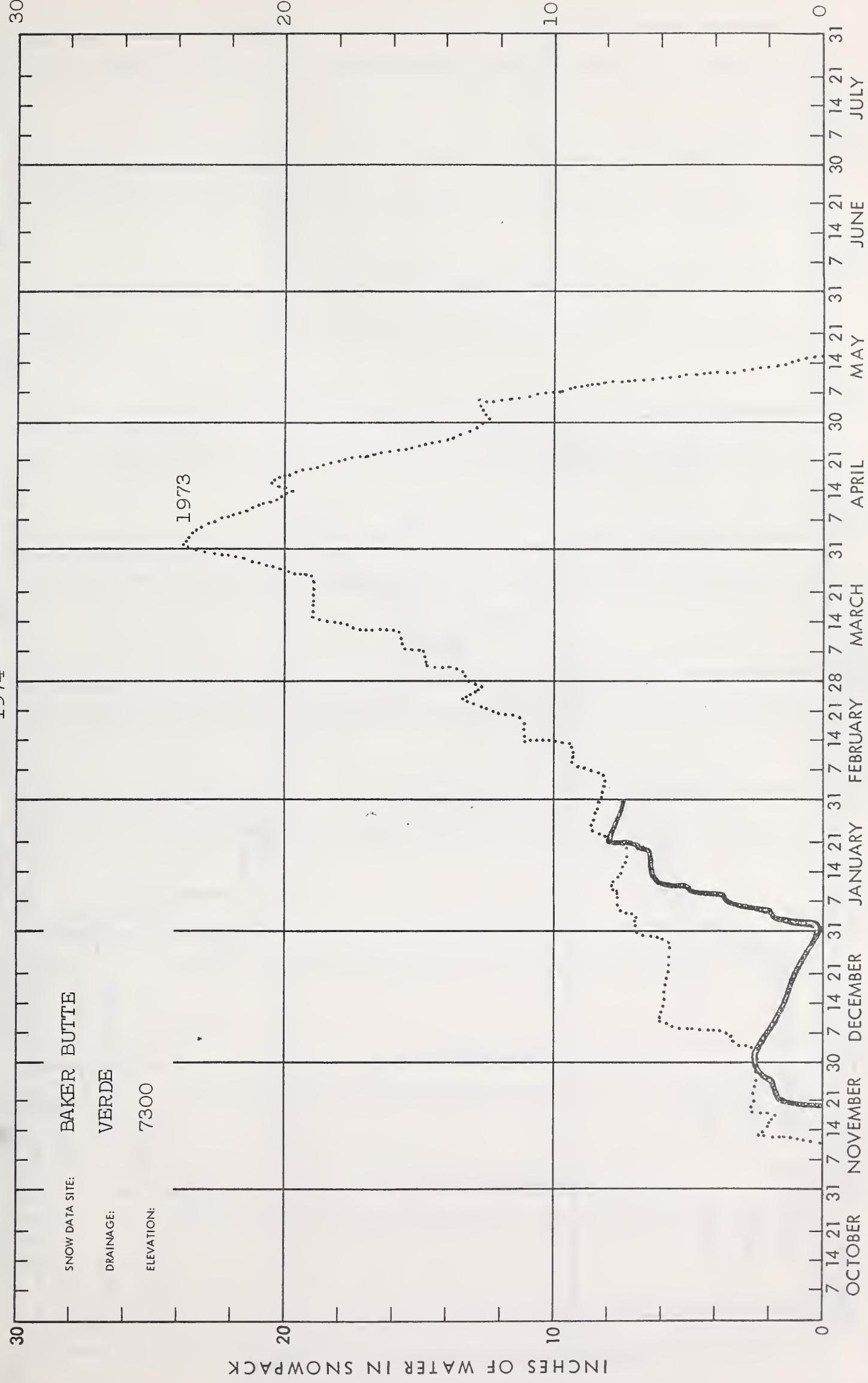
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	THIS YEAR		PAST RECORD	
NAME	Elevation		Snow Depth (inches)	Water Content (inches)	Last Year	Average +
<u>GILA RIVER</u>						
Bear Wallow	8100	1/31	8	3.4	1.3	4.6
Beaver Head	8000	1/31	7	1.7	3.0	3.1
Coronado Trail	8000	1/30	6	1.6	2.8	2.9
Emory Pass #1 *	7800	1/28	0	0.0	0.7	0.3**
Emory Pass #2 *	7800	1/28	2	0.7	1.2	1.2**
Frisco Divide	8000	1/31	6	2.0	2.5	2.4
Hannagan Meadows *	9090	1/31	25	6.2	9.8	7.0**
Hummingbird (A)	10550	1/31	26	6.3	14.4	10.2**
McKnight Cabin * (A)	9300	1/31	2	0.5	4.0	3.5**
Mogollon	7000	1/31	0	0.0	0.6	1.6
Nutrioso	8500	1/30	5	1.4	2.2	2.1
Redstone Trail	8600	1/31	15	4.4	6.6	6.6**
Rose Canyon	7300	1/31	2	1.0	1.1	2.9
Silver Creek Divide	9000	1/31	20	5.7	9.9	9.5**
State Line	8000	1/31	10	2.7	3.4	2.6
Whitewater (A)	10750	1/31	38	11.3	16.3	12.7**
<u>VERDE RIVER</u>						
Baker Butte	7300	1/30	25	8.4	8.1	4.9**
Baker Butte #2	7700	1/31	37	11.9	12.6	---
Camp Wood	5700	1/31	2	0.6	0.5	0.6
Chalender *	7100	1/31	15	4.3	4.9	2.1
Copper Basin Divide	6720	1/31	9	3.4	2.7	1.6**
Fort Valley	7350	1/28	10	3.5	3.6	1.6
Gaddes Canyon	7600	1/30	19	5.5	6.3	3.5
Happy Jack	7630	1/31	17	6.3	7.2	2.4
Iron Springs *	6200	1/31	0	0.0	0.4	0.8
Mingus Mountain	7100	1/30	2	0.4	0.4	1.0
Mormon Lake *	7350	1/31	17	5.8	7.9	3.0
Mormon Mountain	7500	1/31	22	8.0	9.2	3.6
Newman Park	6750	1/31	11	3.8	5.3	1.6**
Snow Bowl #1	10260	1/30	30	7.8	10.3	7.3**
Snow Bowl #2	11000	1/30	44	11.6	15.8	12.5**
White Horse Lake Jct.	7150	1/31	12	4.1	5.3	2.5**
White Spar	6000	1/31	2	0.4	0.3	0.7**
<u>LOWER COLORADO RIVER</u>						
Bill Williams Int.	8550	1/31	30	8.7	12.0	6.1**
Bill Williams Summit	8950	1/31	35	9.9	13.6	7.6**
Bright Angel	8400	1/31	27	7.2	12.6	---
Chalender *	7100	1/31	15	4.3	4.9	2.1
Fort Valley	7350	1/28	10	3.5	3.6	1.6
Grand Canyon	7500	1/31	12	3.4	7.0	1.6
Williams Ski Run	7720	1/31	26	7.7	10.7	4.7**

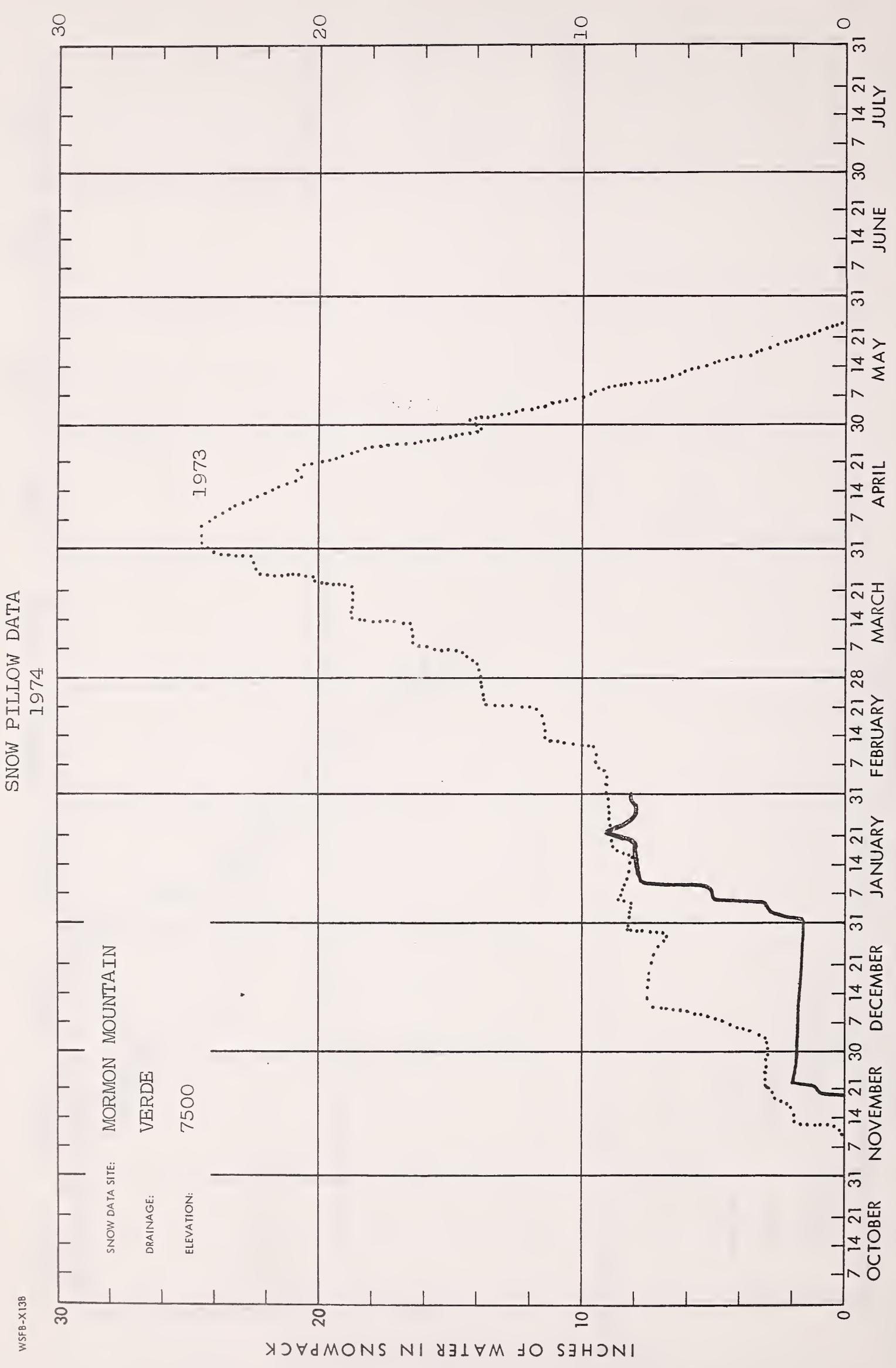
+ 1958-72 15-year period. (*) Adjacent drainage. Adjusted Average. (A) Aerial observation; water

(**) 1958-72
content estimated

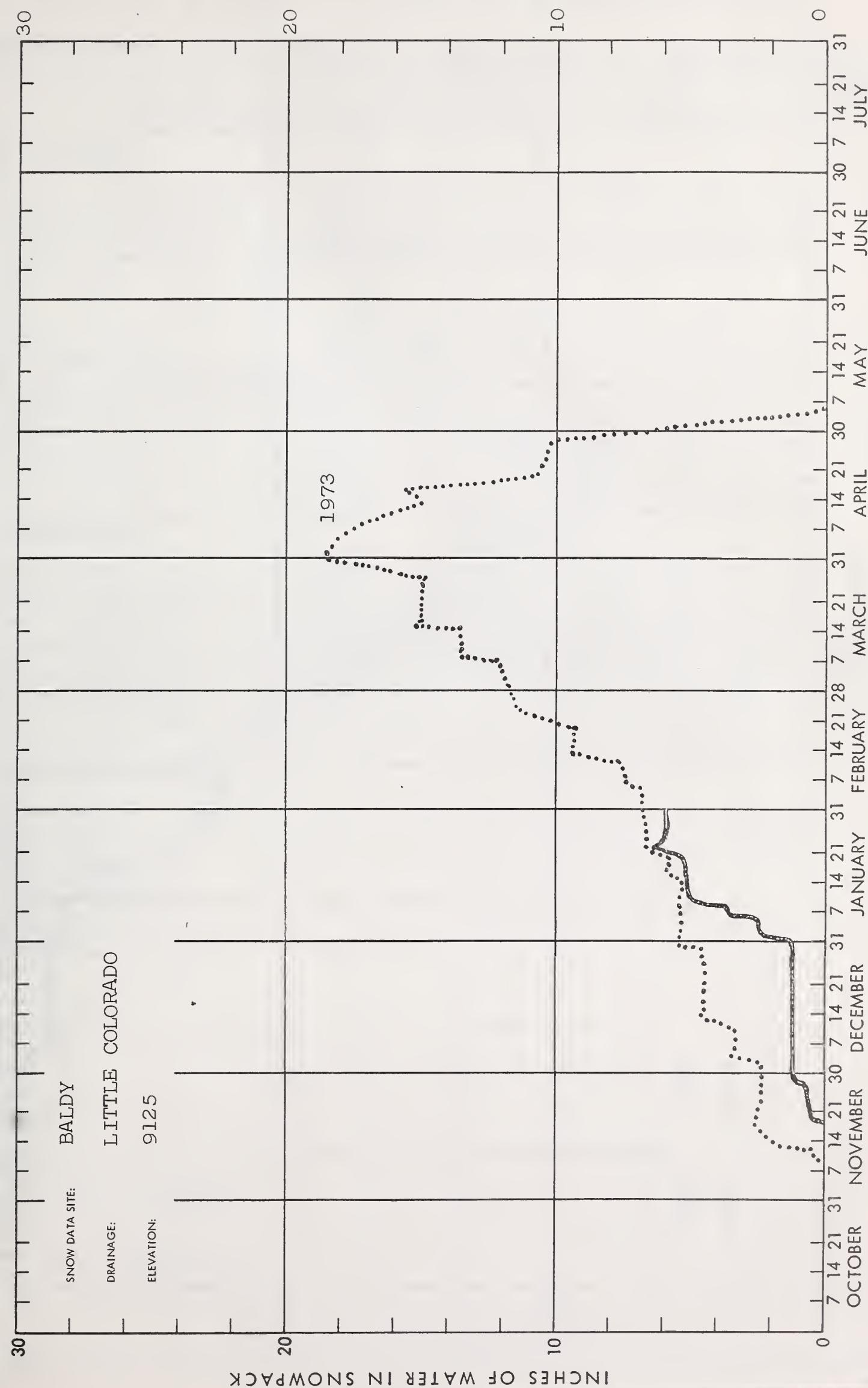
SNOW ABOUT FEBRUARY 1, 1974

+ 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72
Adjusted Average. (A) Aerial observation: water content estimated



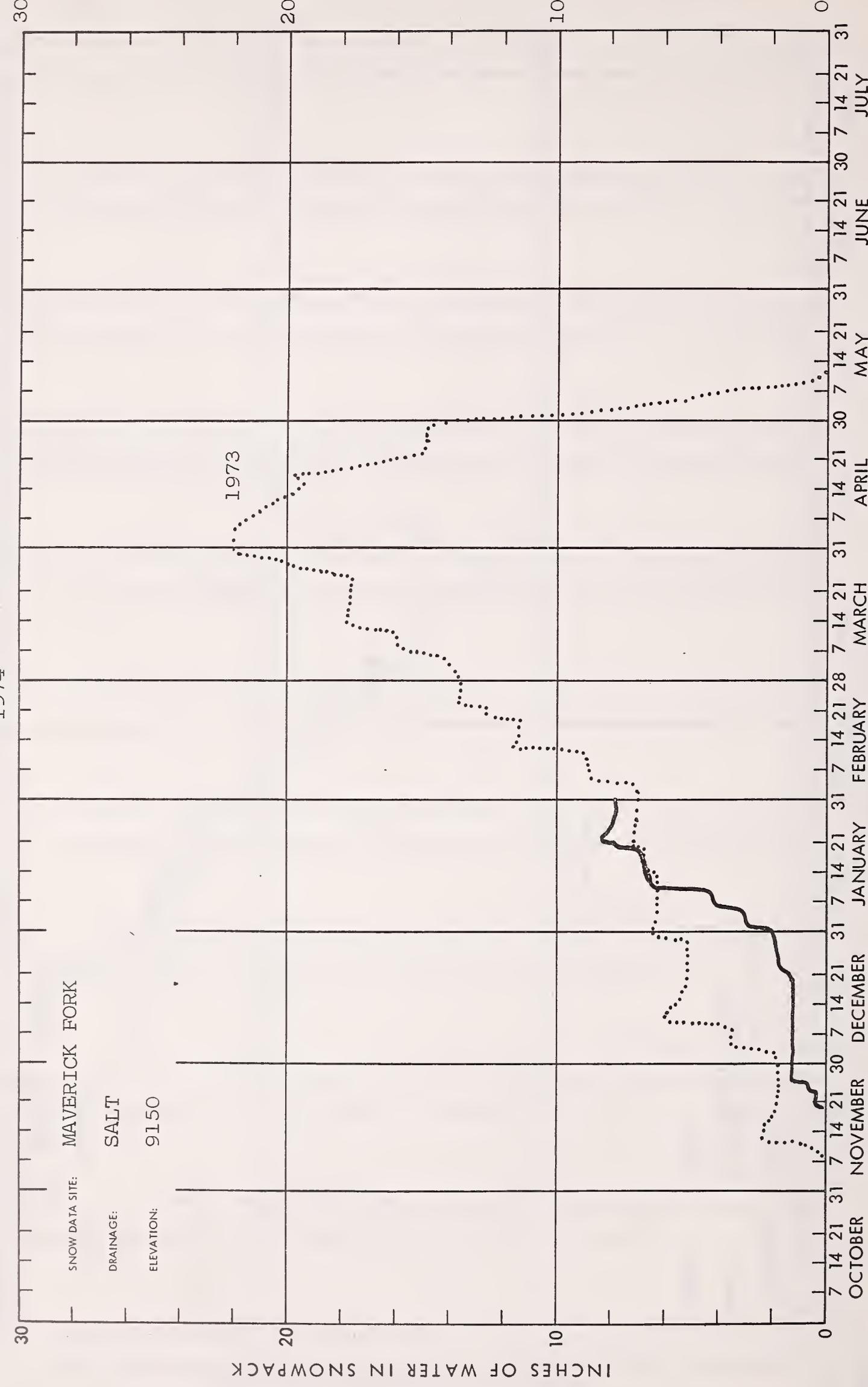


SNOW PILLOW DATA
1974



SNOW PILLOW DATA

1974



PRECIPITATION (Inches) ABOUT FEBRUARY 1, 1974

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX. NOV. 1 TO DATE		
		Date of Reading	Month's Precipitation	Average [†]	This Year	Average [†]	Percent of Average
<u>GILA RIVER</u>							
Silver Creek Divide	9000	1/31	3.40	1.67*	5.58	8.82*	63
Hannagan Meadows **	9030	1/31	4.76	2.13	6.76	8.50	80
Frisco Divide **	8000	1/31	2.00	----	4.03	----	----
<u>SALT RIVER</u>							
Canyon Point	7600	1/31	8.70	2.72*	13.05	10.98*	119
Hannagan Meadows **	9030	1/31	4.76	2.13	6.76	8.50	80
Little Wildcat (Heber Snow Course)	7600	1/31	7.35	2.43	10.85	9.34	116
Maverick Fork	9050	1/31	5.86	2.03	8.76	7.95	110
Workman Creek **	6970	1/30	7.40	3.34	10.35	11.46	90
Wilson Lake	9100	1/30	3.47	2.52*	7.20	8.18*	88
<u>VERDE RIVER</u>							
Baker Butte	7300	1/30	7.97	3.02*	11.48	11.09*	104
Copper Basin Divide	6720	1/31	4.52	1.50*	6.94	6.78*	102
Fort Valley **	7350	1/28	2.69	1.40	5.06	5.42	93
Happy Jack **	7480	1/31	5.62	1.90	7.88	6.88	115
Mingus Mountain	7660	1/30	3.90	1.40	6.50	5.56	117
Mormon Mountain	7500	1/31	7.30	2.23*	10.50	10.17*	103
White Horse Lake Jct.**	7150	1/31	5.17	----	7.77	----	----
<u>LITTLE COLORADO</u>							
Inner Basin #1	9830	1/30	6.00	2.06	9.45	10.19	93
Inner Basin #2	10050	1/30	8.50	2.49*	13.15	11.85*	111
Greer Lakes	8500	----	----	.98	----	4.30	----
Little Wildcat (Heber Snow Course)	7600	1/31	7.35	2.43	10.85	9.34	116
Sheep Crossing (Baldy Snow Course)	9125	1/31	5.20	2.29	8.07	7.75	104

[†] 1958-72 Average
^{*} Adjusted Average

** Data Supplied by
 U.S. Forest Service

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1958-72 Average

* Adjusted Average

** Data Supplied by
U.S. Forest Service

SOIL MOISTURE ABOUT FEBRUARY 1, 1974

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average
<u>GILA RIVER</u>							
Frisco Divide	8000	48	13.3	1/31	6.4	14.3	9.3
<u>SALT RIVER</u>							
Black River Divide	9100	48	16.8	1/31	14.3	17.9	16.3
Canyon Creek	7500	48	18.3	1/31	16.4	17.4	15.8
Corduroy Creek	6000	36	13.5	1/31	7.6	13.6	9.1
McNary	7200	48	16.3	1/31	13.9	17.9	15.0
<u>VERDE RIVER</u>							
Mormon Mountain	7500	48	16.1	1/31	13.3	18.7	15.5
Newman Park	6750	48	17.7	1/31	11.8	19.5	17.2

+ 1958-72 15-year average

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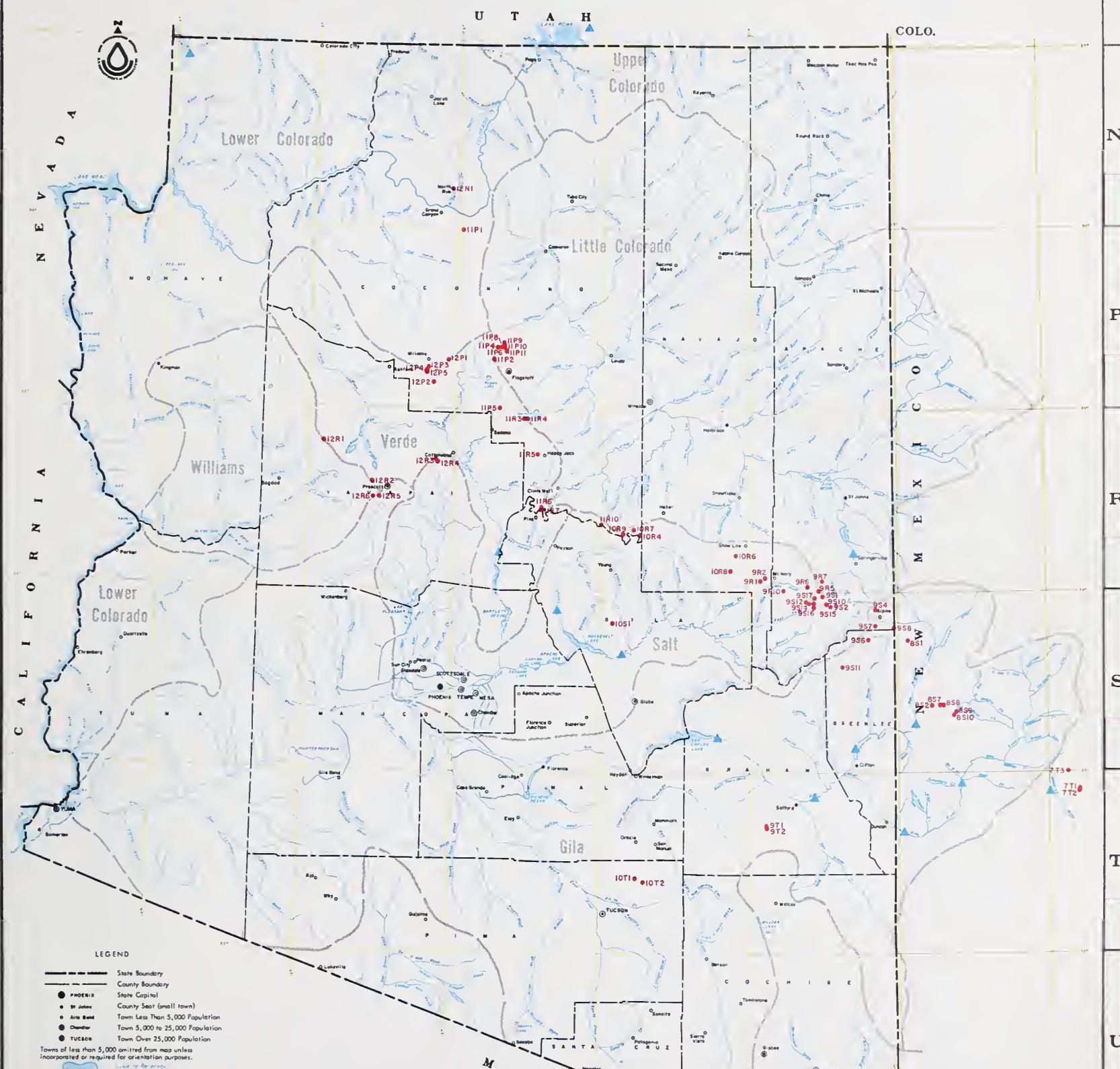
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**SNOW COURSES AND RELATED
DATA MEASURING SITES
ARIZONA**

1973

INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

NUMBER	NAME	SEC.	TWP.	RGE.	ELEV.	DRAINAGE	OBSERVER	RECORD BEGAN
11P10A	Agassiz	32	23N	7E	11200	Little Colorado	SCS-C.F.*	1968
11R7	Baker Butte #2	9	12N	9E	7700	Verde	SCS	1971
11R6PSP	Baker Butte	4	12N	9E	7300	Verde	SCS	1966
9S1APSP	Baldy	28	7N	27E	9125	Little Colorado	SCS	1950
9S15	Baldy #2	12	6N	26E	9750	Little Colorado	SCS	1963
9S16	Baldy #3	13	6N	26E	10950	Little Colorado	SCS	1963
10T1	Bear Wallow	6	12S	16E	8100	Gila	FS	1948
9S6	Beaver Head	13	4N	30E	8000	San Francisco	FS	1938
12P5	Bill Williams Intermediate	17	21N	2E	8550	Cataract	FS	1967
12P4	Bill Williams Summit	17	21N	2E	8950	Verde	FS	1967
9S10m	Black River Divide	10	6N	27E	9400	Salt	SCS	1954
12N1	Bright Angel	34	33N	3E	8400	Bright Angel Creek	NPS	1947
12R1	Camp Wood	3	16N	6W	5700	Verde	FS	1946
10R7M	Canyon Creek #2	18	11N	15E	7500	Little Colorado	SCS	1958
10R9P	Canyon Point	28	11N	14E	7600	Salt	SCS	1967
12P1M	Chalender	27	22N	3E	7100	Verde	FS	1947
9R7	Cheese Springs	28	8N	27E	8600	Little Colorado	SCS	1969
12R6P	Copper Basin Divide	23	13N	3W	6720	Verde	SCS	1963
10R8m	Corduroy Creek	4	8N	21E	6000	Salt	SCS	1954
9S7	Coronado Trail	26	5N	30E	8000	San Francisco	FS	1938
9T2A	Crazy Horse	34	8S	24E	10200	Gila	FS	1963
11P11a	Doyle Saddle	4	22N	7E	10900	Little Colorado	SCS	1968
7T1	Emory Pass #1	16	16S	9W**	7800	Mimbres	SCS	1967
7T2	Emory Pass #2	16	16S	9W**	7800	Mimbres	SCS	1967
10R6	Forest Dale	2	9N	21E	6430	Salt	BIA	1939
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado	SCS	1951
11P2P	Ft. Valley	22	22N	6E	7350	Little Colorado	FS	1947
8S1MP	Frisco Divide	31	6S	20W**	8000	San Francisco	FS	1938
12R4	Gaddes Canyon	11	15N	2E	7600	Verde	SCS	1954
11P1	Grand Canyon	21	30N	4E	7500	Hance Creek	NPS	1947
9S11P	Hannagan Meadows	19	3N	29E	9090	San Francisco	FS	1964
11R5P	Happy Jack	30	16N	9E	7630	Verde	FS	1951
9R10	Hawley Lake	13	7N	24E	8300	Salt	BIA	1966
10R4PSP	Heber	28	11N	15E	7600	Little Colorado	SCS	1950
9T1A	High Peak	34	8S	24E	10500	Gila	FS	1963
8S9A	Hummingbird	19	11S	17W**	10550	Gila	SCS	1964
11P9P	Inner Basin #1	28	23N	7E	10000	Little Colorado	C.F.*	1967
11P8P	Inner Basin #2	28	23N	7E	9750	Little Colorado	C.F.*	1967
12R2	Iron Springs	22	14N	3W	6200	Bill Williams	SCS	1946
9S2APSP	Maverick Fork	13	6N	27E	9150	Salt	SCS	1950
7S3A	McKnight Cabin	10	15S	10W**	9300	Mimbres	SCS	1967
9R2M	McNary	23	8N	23E	7200	Salt	BIA	1939
9R1	Milk Ranch	33	8N	23E	7000	Salt	BIA	1941
12R3	Mingus Mountain	3	15N	2E	7100	Verde	SCS	1947
8S2	Mogollon	2	11S	19W**	7000	San Francisco	SCS	1953
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado	SCS	1947
11R3MAPSP	Mormon Mountain	14	18N	8E	7500	Verde	SCS	1950
9S12A	Mt. Ord	4	6N	26E	11200	Salt	SRP-SCS	1966
11P5M	Newman Park	25	19N	6E	6750	Verde	SCS	1963
9S4	Nutrioso	23	6N	30E	8500	San Francisco	FS	1938
11R10	Promontory Butte	5	11N	13E	7930	Little Colorado	SCS	1973
8S7	Redstone Trail	5	11S	18W**	8600	San Francisco	SCS	1961
10T2	Rose Canyon	15	12S	16E	7300	Gila	FS	1948
8S8P	Silver Creek Divide	4	11S	18W**	9000	San Francisco	SCS	1964
9S14A	Smith Cienega	10	6N	26E	10050	Salt	SRP-SCS	1966
11P4	Snow Bowl #1	36	23N	6E	10260	Verde	FS	1961
11P6	Snow Bowl #2	31	23N	7E	11000	Verde	FS	1965
9S8	State Line	6	6S	21W**	8000	San Francisco	FS	1938
9S17	Sunrise Summit	36	7N	26E	10600	Salt	SCS	1972
12P2P	White Horse Lake Jct.	2	20N	2E	7180	Verde	FS	1967
12R5	White Spar	19	13N	2W	6000	Verde	SCS	1963
8S10A	Whitewater	19	11S	17W**	10750	Gila	SCS	1964
12P3	Williams Ski Run	9	21N	2E	7720	Cataract	FS	1967
9R6P	Wilson Lake	4	7N	26E	9000	Salt	SCS	1966
10S1P	Workman Creek	33	6N	14E	6900	Salt	FS	1952

A Aerial Snow Depth Marker

a Aerial Snow Depth Marker Only

M Soil Moisture Station

m Soil Moisture Station Only

P Precipitation Storage Gage

SP Snow Pressure Pillow

** NM Principal Meridian

* City of Flagstaff

The Following Organizations Cooperate in the Arizona Snow Survey Work

FEDERAL

Department of Agriculture
Soil Conservation Service
Forest Service
 Apache Forest
 Coconino Forest
 Coronado Forest
 Gila Forest
 Kaibab Forest
 Prescott Forest
 Rocky Mountain Forest and Range Experiment Station
 Tonto Forest
Department Of Commerce
 NOAA, National Weather Service
Department of Interior
 Bureau of Reclamation
 Region III
 Geological Survey
 Arizona District
 Bureau of Indian Affairs
 Fort Apache Reservation
 San Carlos Irrigation Project
 National Park Service
 Grand Canyon National Park
Gila Water Commissioner
 Safford, Arizona

STATE

Arizona Game and Fish Department
Arizona State Parks Board
University of Arizona
 Arizona Agricultural Experiment Station
 Water Resource Research Center

IRRIGATION PROJECTS

Salt River Valley Water User's Association
 Phoenix, Arizona
San Carlos Irrigation and Drainage District
 Coolidge, Arizona

PRIVATE

Southwest Forest Industries, Inc.
 McNary, Arizona
Fort Apache Indian Reservation
 White Mountain Recreation Enterprises

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with the Snow Survey"